

FACT SHEET FOR NPDES PERMIT WA0023159
CITY OF ILWACO WASTEWATER TREATMENT PLANT

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System (NPDES) of permits, which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the state of Washington to administer the NPDES permit program. Chapter 90.48 Revised Code of Washington (RCW) defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

<u>GENERAL INFORMATION</u>	
Applicant	City of Ilwaco
Facility Name and Address	City of Ilwaco Wastewater Treatment Plant and Seaview Collection System P.O. Box 548 Ilwaco, WA 98624
Type of Treatment	Sequencing Batch Reactors (SBRs) and UV disinfection
Discharge Location	Baker Bay on the Columbia River Latitude: 46° 18' 22" N Longitude: 124° 1' 57" W.
Water Body ID Number	Old ID No. WA-CR-1010, New ID No. 1220169456238

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

HISTORY

The Town of Ilwaco was founded in 1848 and constructed its first wastewater collection system in 1920. This first system discharged storm water and wastewater directly into the Columbia River's Baker Bay. In 1964, Ilwaco constructed a primary wastewater treatment plant and connected with the community of Seaview's collection system. The plant was upgraded in 1973 to provide secondary treatment. The plant was rebuilt as a Sequencing Batch Reactor (SBR) system in 1998. The system was overloaded and suffering from high infiltration and inflow (I/I) and was upgraded again in May 2004 with the addition of a third SBR basin.

COLLECTION SYSTEM STATUS

City of Ilwaco owns and operates a sanitary sewer collection system within the city limits. The City of Ilwaco also accepts wastewater from the Seaview Sewer District, the Cape Disappointment State Park, and the Coast Guard Station at Cape Disappointment on a contract basis. The Seaview Sewer District, Washington State Parks and Recreation and the U.S. Coast Guard, own and maintain the sewer collection systems within their respective service boundaries. The City of Ilwaco also annexed two parcels: the Columbia Highlands and the Realvest property. The Columbia Highlands, Realvest property, and the mainlines from the Coast Guard Station and the Cape Disappointment State Park are new. Parts of the collection system in the City of Ilwaco are very old as are parts of the Seaview collection system. The City of Ilwaco completed repair and replacement of approximately 12,000 feet of sewer line in 1998 through 2004. The City will replace approximately 1500 lf of old sanitary sewer in the downtown area in the summer of 2005, which includes the last remaining portions of sewers in the downtown area installed prior to 1970. The remainder of the main line sanitary sewer in the City consists of PVC and concrete sewers installed in the 1970s. Many of the privately owned side sewers in the downtown area are old clay tile that greatly contribute to I/I. The City of Ilwaco has recently annexed approximately 350 acres to the west of the original city limits. A new sanitary sewer has been extended that, with developer extension, will provide sewer service to future developments in this area.

There are multiple pump stations sending wastewater to the Ilwaco plant. There are six pump stations serviced and controlled by the City of Ilwaco. The City owns and operates the two Baker Bay area pump stations and the one pump station in the Sahalie area. A new influent pump station was installed in 1998 with the new plant. The Vandalia Bakers Bay development has two pump stations and there is one pump station at Sahalie. At the Cape Disappointment State Park there is one main pump station to send waste water to the treatment plant, but there are another five pump stations within the park and serviced by the Park. At the North Head Light House there is another main pump station that sends its waste water from the Coast Guard Station to the treatment plant. However, there are another four pump stations owned and serviced by the Coast Guard Station.

Most of the sanitary sewer lines will be replaced at the State Park and there are plans to do the same at the Coast Guard Station. Most of the main-lines in the Ilwaco collection system have been replaced with new PVC pipe. The City has made great effort in recent years to find leaking lines and to smoke test connections. However, there are still about 20 percent of the lines in the system that needs to be replaced. This older system is comprised of asbestos-concrete, clay, or concrete tiles which are prone to I/I problems.

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The Seaview Sewer District is not maintained by the City of Ilwaco. At the time this Fact Sheet was written, the agreement between Seaview and Ilwaco was in dispute and needs to be renegotiated. The Seaview sewer collection system is served by seven pump stations. There are I/I problems in the Seaview system that will need to be addressed by the new permit through a separate I/I report from the Seaview Sewer District. Approximately 90 percent of the Seaview system is older asbestos-concrete pipe that is prone to leaking and a large portion of the mainline is situated in a low lying area with saturated soils (Hazen, 2004)

TREATMENT PROCESSES

The wastewater entering the plant is first pumped up to the headworks at the influent pump station after flow is monitored with a magnetic meter. After pumping, the height is then sufficient to flow through most of the plant. At the headworks the influent is sampled with a 24-hour automatic sampler. The influent is screened with a helical fine-screen and grit is removed with an aerated grit basin. The flow is split to enter one of three sequencing batch reactors (SBRs). The sequencing batch reactors use the activated sludge process and have the ability to select, nitrify, and de-nitrify if needed. After quiescent settling the SBRs act as a clarifier and the supernatant liquid is decanted to an effluent equalization basin. The liquid is then pumped up to the Ultra-Violet (UV) disinfection system. The final effluent flow is monitored with a magnetic meter and a 24-hour automatic sampling station is permanently set up. (See a schematic in Appendix C.)

The effluent from the plant is combined with effluent from a seafood processor (Jesse's Ilwaco Fish Company). The combined effluent is then sent to a short outfall just west of the plant. The outfall is very short, only reaching approximately six feet from the bank. Baker Bay where the outfall discharges is very shallow and goes dry for thousands of feet at low tide cycles. More will be discussed about the outfall below.

The City of Ilwaco and the municipality of Seaview have no significant industry that discharge to the sewer system. There are, however, a few commercial businesses. Two small canneries discharge to the collection system and their wastewater is therefore processed by the plant. The largest seafood processor is Jesse's Ilwaco Fish Company which, as mentioned above, does not discharge to the collection system. Within the City of Ilwaco, there are five restaurants all of which have grease traps and are covered under the City of Ilwaco's grease trap ordinance. No septic dumping is allowed at the plant or anywhere within the system.

The wastewater plant is classified as a Class II facility that requires a Group II certified operator in responsible charge of the plant and an operator in charge of each shift who has at least a Group I certification. The plant is staffed Monday through Friday from 7:30 a.m. to 4:30 p.m., and for a couple of hours each weekend day. The lead operator is Warren Hazen who has a Group II certification and Paul Meyers has a Group I certification. The wastewater treatment plant has alarms which alerts operators of problems and there are alarms at the Ilwaco pump stations. All of the alarms are on telemetry which calls or pages the operators at home after hours and on the weekends.

The Ilwaco SBR plant was built in 1997 and 1998 with a loan and grant from USDA Rural Development and an SRF Loan. The City of Ilwaco is paying debt service on the loans. The Department is negotiating a loan agreement with the Seaview Sewer District for a loan to replace their pump stations all of which pump to the Ilwaco plant.

DISCHARGE OUTFALL

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As noted above, the outfall is very short, only reaching approximately six feet from the bank. Baker Bay where the outfall discharges is very shallow and goes dry, creating a mud flat for thousands of feet at low tide cycles. A study was conducted in 1998 and a report generated by Gray and Osborne, Inc that evaluated the potential to move the outfall several miles from its present location. In the report, the preferred location was to extend the outfall out Jetty A near the Coast Guard Station and the Cape Disappointment Lighthouse. The estimated cost for this new outfall project was estimated at 6.8 to 9.2 million dollars. Because the cost of the outfall project was more than a new sewage treatment plant, moving the outfall was therefore dismissed. Some other discharge options have been examined. These options included subsurface soil absorption system, land application, and constructed wetlands, however, treating the effluent to water reuse standards and applying the wastewater to land or discharging back to the existing location has not been examined. Because the discharge is to shallow water that goes dry, an acute dilution will not be allowed beyond the end of the pipe.

RESIDUAL SOLIDS

The grit, scum, and screenings removed from the influent are disposed of at the local solid waste transfer station. The solids that settle out in the SBRs are wasted (Waste Activated Sludge or WAS) to the biosolids processing end of the plant. The WAS is first sent through a thickening screw press with polymer added to aid in thickening. The thickened sludge is then aerobically digested. There are three digester cells that are hydraulically connected. The sludge is very thick and little decanting of liquid is needed, but if needed, activated sludge can be sent back into the influent. The final digested sludge was meeting Class B biosolids as of the writing of this fact sheet. The biosolids are hauled by the plant operators and land applied on private pasture land. The City of Ilwaco has a permit from the Department to land apply the biosolids.

PERMIT STATUS

The previous permit for this facility was issued on January 29, 1999, and was modified on May 6, 2002. The permit was originally due to expire on June 30, 2004, and has been extended since that time. The 1999 permit was modified in order to take into account improvements at the plant that increased the rated capacity of the plant. These changes involved the increase of air and blowers that improved BOD and TSS removal. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), pH, and Fecal Coliform bacteria. The BOD and TSS limits had seasonal differences.

	EFFLUENT LIMITATIONS FROM 1999 PERMIT	
Parameter	Average Monthly	Average Weekly
Biochemical Oxygen Demand	30 mg/L, 134 lbs/day (Oct. 1 – May 31 st) 150 lbs/day (June 1 – Sept. 30 th) 85 percent removal	45 mg/L 200 lbs/day (Oct 1 – May 31 st) 225 lbs/day (June 1 – Sept. 30 th)
Total Suspended Solids	30 mg/L, 134 lbs/day (Oct. 1 – May 31 st) 150 lbs/day (June 1 – Sept. 30 th) 85 percent removal	45 mg/L 200 lbs/day (Oct 1 – May 31 st) 225 lbs/day (June 1 – Sept. 30 th)
Fecal Coliform Bacteria	200 organisms/100 ml	400 organisms/100 ml

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	EFFLUENT LIMITATIONS FROM 1999 PERMIT	
Parameter	Average Monthly	Average Weekly
pH	Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0	

An application for permit renewal was submitted to the Department on December 22, 2003. The application was returned for corrections and resubmitted in January 2004. The application was accepted by the Department on February 4, 2004.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on August 4, 2004. The facility appeared to be operating well without any major problems at that time. It should be noted that the effluent from the Ilwaco treatment plant was running clear that day while the effluent from Jesse's Ilwaco Fish Company, which shares the outfall, was running turbid-milky white.

During the history of the previous permit, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in DMRs. The period of record examined and shown in Table 1 below is only two years. This short record examination is because the plant has undergone improvements just prior to that time. The most recent upgrades, which include the addition of the third SBR basin, were not completed until May of this year and therefore the characterization does not capture how well the new facility will do. The effluent is characterized as follows:

Table 1: Wastewater Characterization (August 2002 – July 2004)

Parameter	Concentration	Limits from modified 1999 Permit
Flow (max month) (max day)	0.52 mgd 1.47 95 th percentile of max flows	0.7 mgd (avg for max month)
pH	6.2 min – 7.1 max	6.0 – 9.0
BOD	11 mg/L (95 th percentile of max weekly) 101 lbs/day (95 th percentile of max weekly) 94% removal (5 th percentile)	30mg/L monthly, 45 weekly 134 lbs/day monthly 200 lbs/day weekly 85% removal minimum
TSS	51 mg/L (95 th percentile of max weekly) 616 lbs/day (95 th percentile of max weekly) 79% removal (5 th percentile)	30mg/L monthly, 45 weekly 134 lbs/day monthly 200 lbs/day weekly 85% removal minimum
Fecal Coliform	78 org/100ml (avg of weekly geomeans), 181 org/100ml (95 th percentile of max weekly geomeans)	200 org/100ml monthly 400 org/100ml weekly
Ammonia	0.17 mg/L (95 th percentile of all data)	No limit
Temperature	21°C (95 th percentile of all data)	No limit
Dissolved Oxygen	6.3 mg/L (5 th percentile)	No limit

There were seasonal limits for BOD and TSS for both monthly and weekly limits. However, although there were both weekly and monthly limits in the permit, for the above table, only the maximum of the weekly concentrations were used in calculating the 95th percentiles for BOD and TSS. This showed that the most stringent limits were met for BOD but not TSS.

The flow was well within the limits of the new plant during the last two years. These years have been somewhat drier than average. In 1998 and 1999 the facility experienced very high flows of 2.33 mgd during a rainfall event of 2.7-inches (December 1999). There was also a flow of 1.82 mgd during a rainfall event of 2.2-inches (November 1998). In recent years there have been great improvements in the collection system inflow and infiltration (I/I) problems, so the flows at the plant may be much less during similar rain events. The pH was easily met and no violations of the limit were noted. The BOD limits were also easily met.

The weekly values and statistics shown in Table 1 are from the DMRs and represent the monthly maximum of the weekly values. Therefore, a 95th percentile is not based on all weekly values, but rather the maximum values during that month.

The TSS limit was exceeded in several ways. As noted in the table, regarding the maximum weekly limit of 45 mg/L, there were 5 percent of the maximum weekly values that were greater than 51 mg/L. For the weekly loading limit of 134 lbs/day, there were 5 percent of the maximum weekly values that exceeded 616 lbs/day. The plant was supposed to achieve at least 85 percent removal of TSS, however there were 5 percent of the samples that were below 79 percent removal.

The fecal coliform limits of 200 org/100 ml monthly and 400 org/100 ml weekly were met with the average of geometric means at 78 org/100 ml and 95 percent of the samples showing less than 181 org/100 ml. The ammonia data showed a 95th percentile of 0.17 mg/L. Although there was no limit for ammonia, the data will be used to examine the reasonable potential to violate water quality criteria later in this fact sheet. A 95th percentile of temperature during the summer months of June through September was 21°C. Temperature also does not have a limit but will be examined later in this fact sheet.

Other than ammonia there is no effluent data on toxic substances. The only industry in town is the seafood processors with no known toxic discharges and the largest of these plants bypasses the Ilwaco WWTP.

PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992.) The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported,

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are not controllable at the source, are not listed in regulation, and do not have a reasonable potential to cause a water quality violation. Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the 2002 Wastewater Treatment Plant Expansion Pre-Design Report prepared by Gray and Osborne, Inc. (Gray & Osborne, 2002) and are as follows:

Table 2: Design Standards for Ilwaco WWTP.

Parameter	Design Quantity
Monthly average flow (max. month)	1.01 mgd
Annual average flow	0.50 mgd
Peak Hour Flow Rate (peak day)	2.74 mgd
BOD ₅ influent loading	1,600 lbs/day
TSS influent loading	1,600 lbs/day
Total Kjeldahl Nitrogen (TKN)	320 lbs/day

The design quantities were based on equivalent population projections as detailed in the wastewater facility plan update (Gray & Osborne, 2001) which included the City of Ilwaco, Seaview Sewer District, Coast Guard Station, and the State Park through the year 2020. This design population equivalent for the year 2020 totals 6,887.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

The following technology-based limits for pH, fecal coliform, BOD₅, and TSS are taken from Chapter 173-221 WAC are:

Table 3: Technology-based Limits.

Parameter	Limit
pH:	shall be within the range of 6 to 9 standard units.
Fecal Coliform Bacteria	Monthly Geometric Mean = 200 organisms/100 ml Weekly Geometric Mean = 400 organisms/100 ml

Parameter	Limit
BOD ₅ (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L
TSS (concentration)	Average Monthly Limit is the most stringent of the following: - 30 mg/L - may not exceed fifteen percent (15%) of the average influent concentration Average Weekly Limit = 45 mg/L

The following technology-based mass limits are based on WAC 173-220-130(3)(b) and 173-221-030(11)(b).

Monthly BOD and TSS effluent mass loadings (lbs/day) were calculated as the maximum monthly influent design loading (1,600 lbs/day) x 0.15 = 240 lbs/day.

The weekly average effluent mass loading is calculated as 1.5 x monthly loading = 360 lbs/day.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin-wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the state of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The state was issued 91 numeric water quality criteria for the protection of human health by the U.S. EPA (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or

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adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

ANTIDEGRADATION

The state of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when receiving waters are of higher quality than the criteria assigned, the existing water quality shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

The natural condition of the water cannot be easily discerned from the conditions in the ambient environment as they exist today.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Baker Bay at the mouth of the Columbia River which is designated as a Class A receiving water in the vicinity of the outfall. As stated earlier, Jesse's Ilwaco Fish Company also discharges at the same location. There are no other nearby direct marine discharges into the bay. The Ilwaco marina is the only known significant nearby non-point sources of pollutants.

Characteristic uses include the following: water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

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SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	14 organisms/100 ml maximum geometric mean
Dissolved Oxygen	6 mg/L minimum
Temperature	20 degrees Celsius maximum or incremental increases above background (Columbia River)
pH	7.0 to 8.5 standard units
Turbidity	less than 5 NTUs above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

The conditions listed in the table above are for fresh water. The conditions at the mouth of the Columbia are estuarine being both fresh and marine. The salinity near the edge of Baker Bay appeared to range from 22.8 to 31.3 parts per thousand when sampled in September of 2000.

There are several parameters listed on the 303(d) list of limited water bodies in the mouth of the Columbia River. The 1998 303(d) listing for WRIA 28 has listings for PCBs in sturgeon and dioxin in crab. Both of these substances are not typically found in municipal wastewater effluent especially from a small community with no industry. There was a fecal coliform listing for the Ilwaco Marina. The Ilwaco WWTP discharge is outside of the boat basin and the treatment plant does a good job treating fecal coliform with UV disinfection. Marinas typically have their own problems with producing fecal coliform. There is also a listing for total dissolved gas. The total dissolved gas is almost entirely a product of excess water spilled at the upstream hydropower facilities and is not a product of wastewater facilities.

A temperature TMDL is in progress for the Snake and Columbia Rivers. Diminishing riparian vegetation, increased thermal absorption due to dams (with shallower backwaters), return flows from irrigation, and increased numbers of thermal discharges have all had significant effects on the Columbia River temperature as a whole. This is measurable in all areas of the river; however, the mouth of the Columbia is heavily influenced by the ocean. The high salinity shows that the water in Baker Bay is readily mixed with the ocean. The shallow mudflats may also naturally warm waters in the Bay on flood tides, but rapid cooling by the ocean waters is expected. More will be discussed under Considerations for Surface Waters below.

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone is authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones in Chapter 173-201A WAC and are defined as follows:

The dilution factors of effluent to receiving water that occur within these zones have been determined at the critical condition by the use of the Visual Plumes computer model. The dilution factors have been determined to be (from Appendix C):

	Acute	Chronic
Aquatic Life	1	9

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. This outfall is situated on the bottom of a shallow bay approximately three-feet deep. The Bay goes dry every tide cycle exposing the outfall for periods of more than one-hour. The acute criteria are based on one-hour averages. Therefore, an acute dilution zone will not be allowed beyond the end of the pipe which translates to a 1:1 dilution.

The chronic criteria are based on four-day average concentrations. A pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even after dilution has occurred. Thus, the method of calculating water quality-based effluent limits varies with the point at which the pollutant has its maximum effect. The modeling used a depth of two-feet. The resulting chronic dilution factor was 9:1.

The derivation of water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The only toxin that appears to be present is ammonia. The critical condition for ammonia in Baker Bay is in the summer when temperatures are highest. Because of the tidal influences, the river flow has little effect on the outcome of the dilution. Ambient data at critical conditions in the mouth of the Columbia and Baker Bay was taken from LAZAR environmental data base run by the state of Oregon and data collected and maintained by the USGS Bi-State water quality study. The ambient background data used for this permit includes the following:

Parameter	Value used
Velocity	0.36 m/sec
Depth	2 feet
Width	Several miles
Temperature	19.1° C
pH (high)	8.1
Dissolved Oxygen	5.5 mg/L
Total Ammonia-N	0.29 mg/L
Fecal Coliform	< 2 org/100 ml
Salinity	22.8 – 31.3 PPT
All Metals	0.0 (assumed below detection limits)

BOD₅--Under critical conditions there was no prediction of a violation of the dissolved oxygen criterion for the receiving water. The water quality criterion for dissolved oxygen for marine water is 6 mg/L. The dissolved oxygen in the mouth of the Columbia appears to have a 10th percentile of 5.5 mg/L. The DO in the effluent had a 5th percentile of 6.3 mg/L, which is above the criterion. The mixing of the effluent with the ambient DO will raise the DO slightly in the vicinity of the outfall. There should be no long-term impact from the discharge. However, monitoring of the DO will be required.

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The facility has done a good job at removing BOD which can also reduce the dissolved oxygen. However, BOD takes several days to reduce the oxygen in water and by then the BOD from Ilwaco will be well mixed with water from the ocean. The result is a small amount of BOD with a huge amount of ultimate dilution.

Temperature--The impact of the discharge on the temperature of the receiving water was modeled by simple mixing analysis at critical condition. The receiving water temperature at the critical condition is 19.90°C and the effluent temperature is 21.00°C. The predicted resultant temperature at the boundary of the chronic mixing zone is 20.02°C and the incremental rise is 0.12°C. The incremental rise in temperature is less than 0.3°C. The solar heating of water moving across mudflats is likely much greater than the small amount of heat discharged by the facility.

Under critical conditions there is no predicted violation of the Water Quality Standards for Surface Waters. Therefore, no effluent limitation for temperature was placed in the proposed permit.

pH--Because of the high buffering capacity of marine water, compliance with the technology-based limits of 6 to 9 will assure compliance with the Water Quality Standards for Surface Waters.

Fecal coliform--The numbers of fecal coliform were modeled by simple mixing analysis using the geometric mean detected over the last three years, which was 104 organisms per 100 ml and a dilution factor of 9.

The fecal coliform criterion in marine waters is 14 col/100 ml. With the low dilution the simple mixing shows that the fecal coliform criterion would be violated.

$$\text{Mixed Water FC} = (\text{FCup}(\text{DF}-1) + \text{FCdis})/\text{DF} = (2(8) + 104)/9 = 13.3 \text{ org}/100 \text{ ml}$$

An effluent limit of 110 organisms/100 ml was found to be protective of the fecal coliform criterion and therefore will be imposed instead of the technology-based limitation.

$$\text{Mixed Water FC} = (2(8) + 110)/9 = 14.0$$

Because the criterion is based on a geometric mean, the 110 col/100 ml is also a geometric mean based on individual samples. We are recommending that the monitoring frequency for fecal coliform for meeting 110 col/100 ml be a monthly geometric mean. The Water Quality Standards have a second criterion for fecal coliform where no more than 10 percent of the samples taken to calculate the geometric mean may exceed 43 col/100 ml. This translates to no more than 10 percent of the fecal coliform samples may exceed 370 col/100 ml. The technology limit is 104 col/100 ml monthly and 370 col/100 ml daily. Because the recommended sampling for fecal coliform is twice per week, the best way to implement the 10 percent portion of the criterion is to have a daily limit.

Toxic Pollutants--Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

Ammonia was determined to be present in the discharge. There are no other known samples of toxic metals at this time, however, due to the non-industrial nature of the City, it is not expected that there would be any significant quantities of metals. A reasonable potential analysis (See Appendix C) was conducted on the ammonia to determine whether or not effluent limitations would be required in this permit.

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The determination of the reasonable potential for ammonia to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. The critical condition in this case occurs during the summer months when temperature increases the ammonia toxicity.

Valid ambient background data was available for ammonia for the mouth of the Columbia River. Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards. This determination assumes that the Permittee meets the other effluent limits of this permit.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department has determined that the applicant's discharge is unlikely to contain chemicals regulated for human health. The discharge will be re-evaluated for impacts to human health at the next permit reissuance.

SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharger characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

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*COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED IN JANUARY 1999,
AND MODIFIED IN MAY 2002*

	Existing Limits		Proposed Limits	
Parameter	Average Monthly	Average Weekly	Average Monthly	Average Weekly
BOD ₅	30 mg/L 134 lbs/day (Oct. 1 – May 31) 150 lbs/day (June 1 – Sept 30) 85% removal min.	45 mg/L 200 lbs/day (Oct 1 – May 31) 225 lbs/day (June 1 – Sept 30)	30 mg/L 240 lbs/day 85%removal	45 mg/L 360 lbs/day
TSS	30 mg/L 134 lbs/day (Oct. 1 – May 31) 150 lbs/day (June 1 – Sept 30) 85% removal min.	45 mg/L 200 lbs/day (Oct 1 – May 31) 225 lbs/day (June 1 – Sept 30)	30 mg/L 240 lbs/day 85%removal	45 mg/L 360 lbs/day
Parameter	Average Monthly	Average Weekly	Average Monthly	Maximum Daily
Fecal Coliform	200 col/100 ml	400 col/100 ml	110 col/100 ml (geomean)	370 col/100 ml (geomean)
pH	Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0		Daily minimum is equal to or greater than 6.0 and the daily maximum is less than or equal to 9.0	

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

Monitoring for dissolved oxygen is being required to further characterize the effluent. This pollutant could have a significant impact on the quality of the surface water.

Monitoring of sludge quantity and quality is necessary to determine the appropriate uses of the sludge. Sludge monitoring is required by the current state and local solid waste management program and also by EPA under 40 CFR 503.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department's *Permit Writer's Manual* (July 1994) for an activated sludge plant with a design flow of less than 2.0 MGD such as the Ilwaco sequencing batch reactor.

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Additional monitoring is required in order to further characterize the effluent and will need to continue to have ammonia, dissolved oxygen, and temperature monitored. These monitored pollutants could have a significant impact on the quality of the surface water.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories*. The laboratory at this facility is accredited for General Chemistry which includes: BOD/CBOD, Dissolved Oxygen, pH, Total Suspended Solids, and Microbiology which includes: Fecal Coliform count.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3 are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4 to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4 restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains Condition S.5 as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems the Permittee is required in permit Condition S7 to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080, State Water Quality Standards, WAC 173-201A, and Biosolids Handling covered under WAC 174-308.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503, and by the Department under Chapter 70.95J RCW and Chapter 173-308 WAC. The disposal of other solid waste is under the jurisdiction of the local County Health Department.

Requirements for monitoring sewage sludge and recordkeeping are included in this permit. This information will be used by the Department's to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

Federal and State Pretreatment Program Requirements

Under the terms of the addendum to the "Memorandum of Understanding between Washington Department of Ecology and the United States Environmental Protection Agency, Region 10" (1986), the Department has been delegated authority to administer the Pretreatment Program [i.e. act as the Approval Authority for oversight of delegated Publicly Owned Treatment Works (POTWs)]. Under this delegation of authority, the Department has exercised the option of issuing wastewater discharge permits for significant industrial users discharging to POTWs which have not been delegated authority to issue wastewater discharge permits.

There are a number of functions required by the Pretreatment Program which the Department is delegating to such POTWs because they are in a better position to implement the requirements (e.g. tracking the number and general nature of industrial dischargers to the sewerage system). The requirements for a Pretreatment Program are contained in Title 40, part 403 of the Code of Federal Regulations. Under the requirements of the Pretreatment Program [40 CFR 403.8(f)(1)(iii)], the Department is required to approve, condition, or deny new discharges or a significant increase in the discharge for existing significant industrial users (SIUs) [40 CFR 403.8 (f)(1)(i)].

The Department is responsible for issuing State Waste Discharge Permits to SIUs and other industrial users of the Permittee's sewer system. Industrial dischargers must obtain these permits from the Department prior to the Permittee accepting the discharge [WAC 173-216-110(5)] (Industries discharging wastewater that is similar in character to domestic wastewater are not required to obtain a permit. Such dischargers should contact the Department to determine if a permit is required.). Industrial dischargers need to apply for a State Waste Discharge Permit 60 days prior to commencing discharge. The conditions contained in the permits will include any applicable conditions for categorical discharges, loading limitations included in contracts with the POTW, and other conditions necessary to assure compliance with State water quality standards and biosolids standards.

The Department requires this POTW to fulfill some of the functions required for the Pretreatment Program in the NPDES permit (e.g. tracking the number and general nature of industrial dischargers to the sewage system). The POTW's NPDES permit will require that all SIUs currently discharging to the POTW be identified and notified of the requirement to apply for a wastewater discharge permit from the Department. None of the obligations imposed on the POTW relieve an industrial or commercial discharger of its primary responsibility for obtaining a wastewater discharge permit (if required), including submittal of engineering reports prior to construction or modification of facilities (40 CFR 403.12(j) and WAC 173-216-070 and WAC 173-240-110, et seq.).

Wastewater Permit Required

RCW 90.48 and WAC 173-216-040 require SIUs to obtain a permit prior to discharge of industrial waste to the Permittee's sewerage system. This provision prohibits the POTW from accepting industrial wastewater from any such dischargers without authorization from the Department.

Requirements for Routine Identification and Reporting of Industrial Users

The NPDES permit requires non-delegated POTWs to "take continuous, routine measures to identify all existing, new, and proposed SIUs and potential significant industrial users (PSIUs) discharging to the Permittee's sewerage system." Examples of such routine measures include regular review of business tax licenses for existing businesses and review of water billing records and existing connection authorization records. System maintenance personnel can also be diligent during performance of their jobs in

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identifying and reporting as-yet unidentified industrial dischargers. Local newspapers, telephone directories, and word-of-mouth can also be important sources of information regarding new or existing discharges. The POTW is required to notify an industrial discharger, in writing, of their responsibilities regarding application for a state waste discharge permit and to send a copy of the written notification to the Department. The Department will then take steps to solicit a State waste discharge permit application.

Annual Submittal of List of Industrial Users

This provision requires the POTW to submit annually a list of existing and proposed SIUs and PSIUs. This requirement is intended to update the Department on an annual basis of the status of industrial users in the POTW's service area, without requiring the POTW to go through the process of performing a formal Industrial User Survey. This provision is normally applied to POTWs not serving industrial or commercial users. Although this permit does not require performance of an Industrial User Survey, the Permittee is nevertheless required under the previous section, to take adequate continuous routine measures to identify existing and new industrial discharges.

Duty to Enforce Discharge Prohibitions

This provision prohibits the POTW from authorizing or permitting an industrial discharger to discharge certain types of waste into the sanitary sewer. The first portion of the provision prohibits acceptance of pollutants which cause pass through or interference. The definitions of pass through and interference are in Appendix B of the fact sheet.

The second portion of this provision prohibits the POTW from accepting certain specific types of wastes, namely those which are explosive, flammable, excessively acidic, basic, otherwise corrosive, or obstructive to the system. In addition wastes with excessive BOD, petroleum based oils, or which result in toxic gases are prohibited to be discharged. The regulatory basis for these prohibitions is 40 CFR Part 403, with the exception of the pH provisions which are based on WAC 173-216-060.

The third portion of this provision prohibits certain types of discharges unless the POTW receives prior authorization from the Department. The discharges include cooling water in significant volumes, stormwater and other direct inflow sources, and wastewaters significantly affecting system hydraulic loading, which do not require treatment.

Support by the Department for Developing Partial Pretreatment Program by POTW

The Department has committed to providing technical and legal assistance to the Permittee in fulfilling these joint obligations, in particular assistance with developing an adequate sewer use ordinance, notification procedures, enforcement guidelines, and developing local limits and inspection procedures.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual municipal NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information

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obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
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1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Gray & Osborne, Inc.

2002. City of Ilwaco, Wastewater Treatment Plant Expansion Pre-Design Report. Seattle, Washington. Publication Number 02704.
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1991. Wastewater Engineering, Treatment, Disposal, and Reuse. Third Edition.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

Laws and Regulations(<http://www.ecy.wa.gov/laws-rules/index.html>)

Permit and Wastewater Related Information
(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

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1994. Permit Writer's Manual. Publication Number 92-109

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1976. Chlorination of Wastewater.

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(E2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on May 12, 2004, and May 19, 2004, in the *Chinook Observer* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on May 25, 2005, in the *Chinook Observer* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Carey Cholski
Municipal Permit Administrator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the 30-day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least 30 days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within 30 days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6554, or by writing to the address listed above.

This permit and fact sheet were written by Eric Schlorff.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a pollutant on an organism that occurs within a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of prevention, control, and treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month (except in the case of fecal coliform). The daily discharge is calculated as the average measurement of the pollutant over the day.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD₅--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD₅ is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

CBOD₅ – The quantity of oxygen utilized by a mixed population of microorganisms acting on the nutrients in the sample in an aerobic oxidation for five days at a controlled temperature of 20 degrees Celsius, with an inhibitory agent added to prevent the oxidation of nitrogen compounds. The method for determining CBOD₅ is given in 40 CFR Part 136.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a pollutant on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing a minimum of four discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots).

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring --Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial User-- A discharger of wastewater to the sanitary sewer which is not sanitary wastewater or is not equivalent to sanitary wastewater in character.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of precipitation-caused drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Interference -- A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal and;

Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued there under (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), sludge regulations appearing in 40 CFR Part 507, the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--A volume that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in State regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

Pass through -- A discharge which exits the POTW into waters of the--State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation), or which is a cause of a violation of State water quality standards.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

- a. Exceeds 0.5 % of treatment plant design capacity criteria and discharges <25,000 gallons per day or;
- b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Significant Industrial User (SIU)--

- 1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;
- 2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement (in accordance with 40 CFR 403.8(f)(6)).

Upon finding that the industrial user meeting the criteria in paragraph 2, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, wetlands, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids are the particulate materials in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

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Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration or mass of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at

(<http://www.ecy.wa.gov/programs/wq/wastewater/index.html>)

Calculation Of Ammonia Concentration and Criteria for fresh water.

Based on EPA Quality Criteria for Water (EPA 400/5-86-001) and WAC 173-201A. Revised 1-5-94 (corrected total ammonia criterion). Revised 3/10/95 to calculate chronic criteria in accordance with EPA Memorandum from Heber to WQ Stds Coordinators dated July 30, 1992.

INPUT	
1. Ambient Temperature (deg C; 0<T<30)	19.1
2. Ambient pH (6.5<pH<9.0)	8.10
3. Acute TCAP (Salmonids present- 20; absent- 25)	20
4. Chronic TCAP (Salmonids present- 15; absent- 20)	15

OUTPUT	
1. Intermediate Calculations:	
Acute FT	1.06
Chronic FT	1.41
FPH	1.00
RATIO	14
pKa	9.43
Fraction Of Total Ammonia Present As Un-ionized	4.4720%
2. Un-ionized Ammonia Criteria	
Acute (1-hour) Un-ionized Ammonia Criterion (ug NH3/L)	244.3
Chronic (4-day) Un-ionized Ammonia Criterion (ug NH3/L)	42.0
3. Total Ammonia Criteria:	
Acute Total Ammonia Criterion (mg NH3+ NH4/L)	5.5
Chronic Total Ammonia Criterion (mg NH3+ NH4/L)	0.9
4. Total Ammonia Criteria expressed as Nitrogen:	
Acute Ammonia Criterion as mg N	4.5
Chronic Ammonia Criterion as N	0.77

REASONABLE POTENTIAL SPREADSHEET FOR AMMONIA TOXICITY

This spreadsheet calculates the reasonable potential to exceed state water quality standards for a small number of samples. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 56. User input columns are shown with red headings. Corrected formulas in col G and H on 5/98 (GB)

Parameter	Metal Criteria Translator as decimal		Metal Criteria Translator as decimal	Ambient Concentration (metals as dissolved) ug/L	State Water Quality Standard		Max concentration at edge of...		LIMIT REQ'D?
	Acute	Chronic			Acute ug/L	Chronic ug/L	Acute Mixing Zone	Chronic Mixing Zone	
							ug/L	ug/L	
Ammonia	1.00	1.00	290.0000	4500.0000	770.0000	1078.50	377.61	NO	

CALCULATIONS

Effluent percentile value	Pn	Max effluent conc. measured (metals as total recoverable) ug/L	Coeff Variation CV	S	# of samples n	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor
0.95	0.050	174.00	0.60	0.55	1	6.20	1	9

Water Quality-Based Permit Limits for Fecal Coliform

(based on EPA/505/2-90-001 Box 5-2).

Based on Lotus File WQBP2.WK1 Revised 19-Oct-93

INPUT

1. Water Quality Standards (Concentration)
 - Acute (one-hour) Criteria: 110.000
 - Chronic (n-day) Criteria: 110.000
2. Upstream Receiving Water Concentration
 - Upstream Concentration for Acute Condition (7Q10): 2.000
 - Upstream Concentration for Chronic Condition (7Q10): 2.000
3. Dilution Factors ($1/\{\text{Effluent Volume Fraction}\}$)
 - Acute Receiving Water Dilution Factor at 7Q10: 1.000
 - Chronic Receiving Water Dilution Factor at 7Q10: 9.000
4. Coefficient of Variation for Effluent Concentration
(use 0.6 if data are not available): 1.036
5. Number of days (n1) for chronic average
(usually four or seven; four is recommended): 4
6. Number of samples (n2) required per month for monitoring: 8

OUTPUT

1. Z Statistics
 - LTA Derivation (99%tile): 2.326
 - Daily Maximum Permit Limit (99%tile): 2.326
 - Monthly Average Permit Limit (95%tile): 1.645
2. Calculated Waste Load Allocations (WLA's)
 - Acute (one-hour) WLA: 110.000
 - Chronic (n1-day) WLA: 974.000
3. Derivation of LTAs using April 1990 TSD (Box 5-2 Step 2 & 3)
 - Sigma^2 : 0.7295

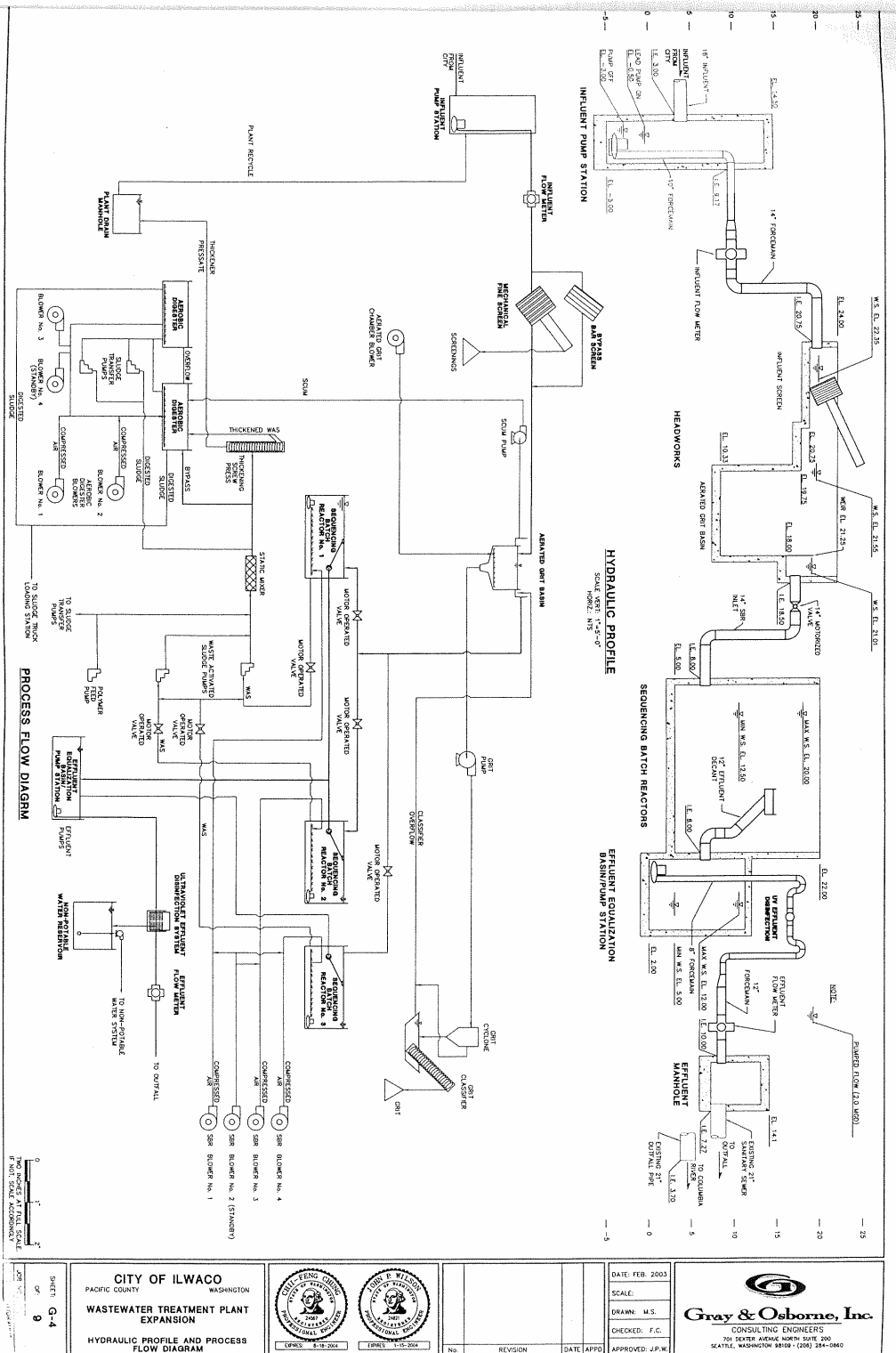
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Sigma ² -n1:	0.2379
LTA for Acute (1-hour) WLA:	21.727
LTA for Chronic (n1-day) WLA:	352.810
Most Limiting LTA (minimum of acute and chronic):	21.727

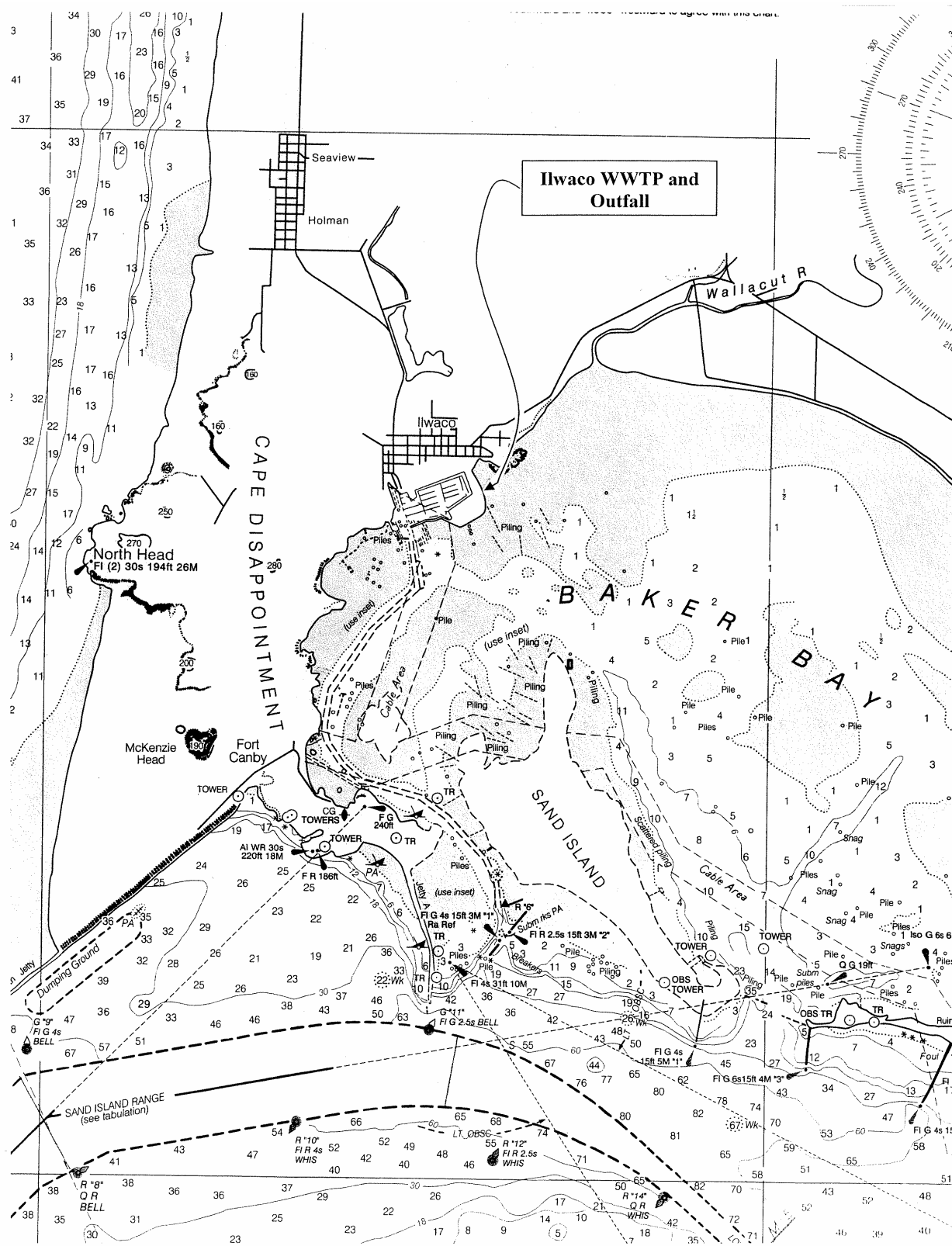
4. Derivation of Permit Limits From Limiting LTA (Box 5-2 Step 4)

Sigma ² -n2:	0.1260
Daily Maximum Permit Limit:	110.000
Monthly Average Permit Limit:	36.577

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APPENDIX D--RESPONSE TO COMMENTS

The following comments were from: Michael C. Fenning for the Seaview Sewer District

As a newcomer to the wastewater world of the peninsula, I feel there are others who can better describe the additions needed to make the history of the Joint Treatment Plant accurate. I must take exception with the mistaken item in the last paragraph of the 'Collection System Status' heading found under 'Background Information'. This is the top of page three of the Fact Sheet.

The misstatement of concern is "There are I/I problems in the Seaview system..." Please review the first attachment, *Seaview 2004 I/I*, which shows the Seaview Sewer District to [sic] has no Infiltration and Inflow problem (per Publication No. 97-03 as monthly averages).

In contrast, the second attachment, *Ilwaco 2004 I/I*, shows Ilwaco's system going outside acceptable parameters during the month of January and the flow following the rain as though in a combined system the rest of the year.

The clincher is the third graph, *Joint WWTP I/I*, Which shows Ilwaco/Seaview looking good together. In fact, it is the stable flow provided by the well maintained pipes of the Seaview Sewer District that enables Ilwaco to meet the Publication's Standards.

The data comes from published copies of Permit No. WA0023159 covering the dates cited. They are signed by Warren M. Hazen.

Ecology Response:

The Seaview collection system as with all collection systems needs to be monitored and maintained. The Seaview collection system does have a large percentage of older asbestos-cement pipes which are known to leak in other systems around the state therefore the tracking and reporting of flows over time is important for identifying both I/I and exfiltration.

The following comments were from Nancy E. Lockett P.E. from Gray & Osborne, Inc who was acting as the consultant on behalf of the City of Ilwaco.

General Comment:

The applicant for the permit was the City of Ilwaco, not the City of Ilwaco and the Seaview Sewer District. The City of Ilwaco is the owner and operator of the Wastewater Treatment Facility. The City is solely responsible for the operation and maintenance, and incurred any penalties associated with the WWTP. Seaview Sewer District owns and operates the collection system that serves the District and discharges into the City of Ilwaco collection system. Seaview Sewer District should be identified as a "contributing jurisdiction" and not a co-applicant. The City of Ilwaco attorney has submitted a letter to Ecology that includes recommendations for clarification of obligations and reporting requirements for the City and Seaview Sewer District. The City concurs with these recommendations and requests that Ecology implement the recommendations.

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Summary of Permit Report Submittals, Page 4 of 24:

Please provide a table that lists the reporting requirements for the City separately from the reporting requirements for Seaview Sewer District in order to avoid confusion regarding the reporting requirements for the City and the contributing jurisdiction of Seaview Sewer District.

S1. Discharge Limitations, page 5 of 24:

The proposed fecal coliform discharge limits are significantly different from the fecal coliform limits in the existing permit. The fecal coliform limits in the existing permit require that the monthly geometric mean shall not exceed 200 organisms/100 ml and that the weekly geometric mean shall not exceed 400 organisms/100 ml. The proposed limits are average monthly geometric mean of 37 organisms/100 ml and weekly geometric mean of 110 organisms/100 ml. The existing permit identifies the discharge location, the Columbia River, as a Class A fresh water according to WAC 173-201A-130. The Draft Permit, page 10 Fact Sheet, indicates that the discharge location at the mouth of the Columbia River is designated as a fresh water Class A receiving water in the vicinity of the outfall.

Jesse's Ilwaco Fish Company discharges fish processing wastewater through the same outfall as the City's wastewater treatment plant. Jesse's Ilwaco Fish holds an NPDES permit (No. WA0000361, expiration date June 30, 2006) for this discharge. A comparison of the water quality criteria for the shared outfall in the Jesse's Ilwaco Fish NPDES permit (Fact Sheet for NPDES Permit No. WA0023159, page 4) and The Draft City of Ilwaco NPDES permit (fact sheet for NPDES Permit No. WA0023159, page 10) is shown in the table below.

Water Quality Criteria Comparison			
Constituent	Jesse's Ilwaco Fish Permit No WA0000361	Current City of Ilwaco permit No. WA0023159	Draft City of Ilwaco Permit No. WA0023159
Fecal Coliform	100 org./100ml Maximum geomean	100 col./100 ml maximum geomean	14 org./100 ml maximum geomean
Chlorine Residual, Total	19µg/L acute, 11 µg/L chronic	(Does not apply – UV disinfection)	(Does not apply – UV disinfection)
Dissolved Oxygen	8 mg/L Minimum	8 mg/L Minimum	6 mg/L Minimum
Temperature	20 degrees Celsius maximum or incremental increases above background	Shall not exceed 20 degrees Celsius due to human activities	20 degrees Celsius maximum or incremental increases above background (Columbia River)
pH	6.5 to 8.5 standard units	6.5 to 8.5 standard units	7.0 to 8.5 standard units
Turbidity	Less than 5 NTU above background	Less than 5 NTU above background	Less than 5 NTU above background
Toxics	No toxics in toxic amounts	No toxics in toxic amounts	No toxics in toxic amounts

The Department of Health has not identified any approved shellfish harvesting areas or certified shellfish beds in Baker Bay that would warrant the protection under the higher marine coliform standard (Frank Meriwether, Department of Health, personal communication, June 22, 2005).

The UV disinfection facilities were designed according to the City's NPDES permit effluent limitation of 200 organisms/100 ml monthly and 400 organisms/100 ml weekly and the approved

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1994 City of Ilwaco Wastewater Facilities Plan and the 2002 Wastewater Facility Plan Amendment. A significant change in the fecal coliform effluent limits at this time would require a difficult and costly change in the equipment and operation of the wastewater treatment plant and would provide no benefit over the current condition.

The City requests that Ecology maintain consistency in receiving water quality criteria for fecal coliform with the current City of Ilwaco NPDES permit and the Jesse's Ilwaco Fish permit and apply the fresh water quality standard for fecal coliform of 100 organisms/100 ml. There are no viable shellfish resources in Baker Bay that require protection via a higher marine water fecal coliform standard of 14 organisms/100 ml. It appears that technology-based discharge limits of 200 organisms/100 ml monthly and 400 organisms/100 ml weekly would be protective of the fecal coliform criteria for the receiving water (Columbia River).

S2. Monitoring Requirements, page 6 of 24:

The City currently monitors BOD and TSS once per week. Twice weekly monitoring will create a hardship on the operator. The wastewater treatment plant has maintained an excellent record of compliance with only one monitoring session per week for these parameters.

Ecology Response:

The twice weekly monitoring rate is the Department's standard recommended for a facility of this size and complexity. Please see the Department's Permit Writer's Manual for more information on recommended monitoring frequency.

G&O stated that the fecal coliform limit should be based on the fresh water criterion of 100 org/100 ml because the water quality standards specify that the Columbia River is classified under WAC 173-201A-130(20). However the salinity at the mouth of the Columbia River in the vicinity of Baker Bay is 20 to 30 ppt and the water quality standards under WAC 173-201A-060(2) has a provision that when "In brackish waters of estuaries, where the fresh and marine water quality criteria differ within the same classification, ...The marine criteria shall apply ...for fecal coliform organisms when the salinity is ten parts per thousand or greater." It appears that the marine water quality standard for fecal coliform of 14 org/100 ml must apply to this discharge.

The G&O comment quoted that the State Department of Health "...has not identified any approved shellfish harvesting areas or certified shellfish beds in Baker Bay that warrant the protection under the higher marine coliform standard." However the Washington State Department of Fish and Wildlife has found and documented the presence of Eastern Softshell Clams in Baker Bay (Bruce Kauffman, WDFW, personal communication, July 28, 2005). The marine fecal coliform criteria also protects marine primary contact recreation under the updated water quality standards (Amended July 1, 2003). Therefore, the marine fecal coliform standard will need to remain the goal in protection under this permit.

In reexamining the effluent data and the surface Water Quality Standards WAC 173-201A-210(2)(B)(ii) and 210(3)(B)(i) it was determined that the limits proposed in the public draft permit for fecal coliform should be amended. A water quality based limit is suggested.

The Surface Water Quality Standards WAC 173-201A-210(2)(B)(ii) and 210(3)(B)(i) for shellfish and recreation respectively both require the use of a geometric mean of monthly samples. During the period from August 2003 through April 2004 the maximum fecal coliform

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sample was 200 org/100 ml; however the maximum monthly geometric mean shown on the monthly Discharge Monitoring Records (DMRs) was 104 org/100 ml. With dilution this amounts to:

$$\text{Mixed Water FC} = (2(8) + 104)/9 = 13.3 \text{ org./100 ml}$$

The result is that the FC was met at the edge of the mixing zone under these worst conditions (using the geometric mean of the monthly samples). The high fecal coliform events appeared to coincide with rainfall events. However, the facility would not be able to meet 14 org/100 ml if discharging at the technology based limits of 200-400 org/100 ml. The facility underwent a major modification which added a third SBR basin, completed in May of 2004. The majority of the data used above is therefore with only two SBR basins. The last winter was mild but there were a couple of rain events. One rainfall event had 2.7 inches of rain in April of 2005. The maximum 30 day geometric mean of fecal coliform was 41 org/100 ml. It appears that the third basin has reduced the incidence of fecal coliform.

The water quality-based limits for Ilwaco require the geometric means of the monthly samples to meet the limit of 14 at the edge of the mixing zone. Therefore, the monthly effluent limit will be 110 as shown earlier.

The other part of the water quality standards requires that no more than 10 percent of the samples used to calculate the monthly geometric mean shall exceed 43 org/100 ml. Because the recommended sampling for fecal coliform has been and will remain twice per week, the best way to implement the 10 percent portion of the rule is to have a daily limit. Most months have eight samples. If sampling two times per week then $1/8 = 0.125$ or slightly greater than 10 percent. Some months will have ten samples, so that each sample will equate to 10 percent of the monthly samples.

Having a daily sample means that no one sample can exceed 43 org/100 ml at the edge of the mixing zone, which equates to a daily effluent limit of 370 org/100 ml using the following simple mixing equation:

$$\text{Mixed Water FC} = (2(8) + 370)/9 = 43 \text{ org/100 ml}$$

Therefore the daily limit will be 370 org/100 ml. Note that the daily limit is not a geometric mean of the weekly samples. The fecal coliform limits amended from the public review draft and recommended for the permit are summarized below:

Fecal Coliform Water Quality-Based Limits

Parameter	Monthly Limit	Daily Limit
Fecal Coliform	110 org/100 ml (geomean)	370 org/100 ml

Over the last four years, the monthly geomean value recommended above has not exceeded 104 org/100 ml. The daily has also not exceeded 200 org/100 ml and therefore it is expected that the facility will not have difficulty in meeting the suggested limits. Because the majority of the data was gathered when the facility had only two SBR basins, it is much less likely that the facility will violate with three basins.

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Comments - Fact Sheet for NPDES Permit No. WA0023159:

General Information, Page 1:

The General Information regarding the permit is in error. The facility covered by the permit is the City of Ilwaco Wastewater Treatment Plant. The Seaview Collection System was not listed as a facility under the control of the City of Ilwaco on the permit application.

Collection System Status, Page 2:

The City of Ilwaco Wastewater Treatment Plant is currently providing wastewater treatment to all wastewater generated at Cape Disappointment State Park and the U.S. Coast Guard Station at Cape Disappointment. The 3rd paragraph is not correct in stating that at the present time most of the Park and Coast Guard Station have not been hooked to the new main lines.

Ecology Response:

Item in the fact sheet has been changed.

Comment - Surface Water Quality Criteria, Page 10:

Please refer to the discussion above regarding Section S1, Discharge Limitations. The City requests that Ecology maintain the fecal coliform surface water criteria for fresh water that is contained in the existing NPDES permit of 100 organisms/100 ml. Baker Bay is located within the mouth of the Columbia River and is, therefore, designated as fresh water per Chapter 173-201A-602 WAC (2003) and Chapter 173-201A-130 WAC (1997). There are no approved or certified shellfish harvesting beds in Baker Bay according to the Department of Health. Application of the marine criteria for fecal coliform, which is targeted at protecting shellfish resources, does not appear to be justified. The City requests that the technology-based standards of 200 organisms/100 ml monthly and 400 organisms/100 ml weekly be retained as discharge limits in the new NPDES permit.

Ecology Response:

See the prior Department response on this issue.

The following comments were received from David A. Nelson of the Nelson Law Firm representing the City of Ilwaco.

This letter is in response to the 30-day public review of NPDES Permit No. WA0023159. I am the city attorney for the City of Ilwaco (Ilwaco).

The city objects to the inclusion of the Seaview Sewer District (Seaview) on equal basis as the City of Ilwaco and references throughout the permit to Seaview as a "Permittee." This treatment of Seaview is factually incorrect for several reasons.

First, as noted on page 1 of the Fact Sheet, the only applicant is the City of Ilwaco. The Waste Water Treatment Plant (WWTP) is on City of Ilwaco Property and as shown below, solely owned by the city. The city is solely responsible for the operation, maintenance and if necessary, any

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penalties associated with the WWTP. Seaview is not an applicant, has no ownership in the plant, and should not be liable for operating penalties at the WWTP.

Second, in the 1972 Joint Use Agreement between the parties, Seaview agrees to quit claim all of its interest in the WWTP to Ilwaco. In the 1996 Inter Governmental Contract for Wastewater Facilities, the parties agreed that the “Joint Wastewater Treatment Plant shall mean the Wastewater Treatment Plant owned by Ilwaco...” By agreement, Seaview has no ownership in the WWTP.

Third, by listing Seaview equally with Ilwaco, and referring to is as a Permittee, DOE gives the erroneous impression that Seaview has some ownership interest in the WWTP. Ilwaco’s interest is to avoid this impression.

Based on our recent discussions with your office it appears that DOE’s interest is to exercise jurisdiction over the transmission lines and sewage of an entity that contributes to a WWTP but has no ownership interest in the plant. We also understand that this is a common issue among several systems and that a clarifying overall policy would be helpful.

Ilwaco offers three suggestions to help clarify the relationship where one party is an owner/applicant and the other party or parties are non-owner contributors.

1. Refer to the non-owner as a “Contributor”, and “Contributor-Permittee.” This Clearly draws the distinction between the owner-applicant-operator of the WWTP and those entities that merely contribute sewage to the facility.
2. Make Clear on the cover page that there is a distinction in permit application between the owner and non-owner. In the Clark County draft for NPDES Permit No. WA0023639, the cover sheet lists Clark County for the Salmon Creek Wastewater Treatment Plant and Hazel Dell Sewer District and City of Battle Ground “for Their Respective Sewage Collection Systems.” This language sets for key difference between the rights and obligations of the entities, and does not create the perception that Hazel Dell Sewer District or the City of Battle Ground have equal rights and obligations in the sewer plant.
3. Clearly delineate each party’s obligations and reporting requirements within the body of the Permit. The Clark County permit is a good example where applicable permit sections and reporting requirements are separated by separate sections for each entity.

Ilwaco believes these suggestions are practical as illustrated by the fact that they have already been implemented in other jurisdictions. Applying the same format and terminology to NPDES Permit No. WA0023159 will clarify the rights and obligations between Ilwaco and Seaview and will correctly reflect their relationship as an owner and contributor to the Ilwaco WWTP.

Ecology Response:

The Department does not dispute the City of Ilwaco’s assertion that it is the sole owner/operator of the wastewater treatment plant. The Department accepts that Ilwaco is solely responsible for compliance with the permit conditions related to operation of the wastewater treatment plant. However, in addition to the permit conditions related to the wastewater treatment plant, the permit also contains certain requirements related to the operation, maintenance, monitoring and reporting of the sewage collection and conveyance systems tributary to the treatment plant. These requirements are necessary to protect human health and the environment and are relevant

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to both the City of Ilwaco and the Seaview Sewer District for their respective sewage collection and conveyance systems.

The Seaview Sewer District did not submit an application for coverage under this permit. However, by choosing to provide sewer service and own and operate a wastewater collection and conveyance system, the Seaview Sewer District must meet certain obligations under Chapter 90.48 RCW. At this time, it is the Department's determination that these obligations are best met by including the Seaview Sewer District as a Permittee under this permit for the requirements related to the proper operation, maintenance, monitoring and reporting associated with its sewage collection and conveyance system. The Department has identified the specific permit conditions for which the Seaview Sewer District is responsible in the Special Conditions section. Specifically, the Seaview Sewer District is responsible for compliance with the following conditions related to its sewage collection and conveyance system: S3.E, S3.F, S3.G, S4.C, S4.D, S4.E, S5.C, S5.D, S5.E, S5.F, and S6.

The Department will clarify the general responsibilities of each Permittee on the cover of the permit by listing the permittees in the following manner:

City of Ilwaco
P.O. Box 548
Ilwaco, WA 98624

for the City's wastewater treatment plant and sewage collection system

and

Seaview Sewer District
P.O. Box 51
Seaview, WA 98664-0051

for its sewage collection system